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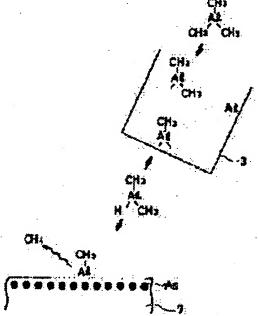
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(54) ATOMIC LAYER CRYSTAL DEPOSITION METHOD AND DEVICE

(57)Abstract:

PURPOSE: To improve the adsorption efficiency at low temperature thereby enabling the title atomic layer crystal deposition of a compound semiconductor conventionally unrealizable to be made feasible by a method wherein at least one alkyl radical coupler coupled with a metal before the moleculers to be deposited reach a substrate is thermal-dissociated to be fed to the substrate to be deposited using the alkyl radical moleculers.

CONSTITUTION: (CH3)3Al having the self deposition stopping function passes through a quartz tube 3 to be thermal—dissociated into –(CH3)2Al, –(CH3)A–, Al atoms. At this time, the Al atoms stick to the inner wall of the quartz tube 3 while the couplers of –(CH3)2Al are coupled with hydrogen to be a stable H(CH3)2Al compound. On the other hand, –CH3Al–is also coupled with hydrogen atoms but to be so unstable compound that –CH3Al may be changed into H(CH3)2Al. Accordingly, the hydrogen of the (CH3)2Al reaching the substrate 7 surface is dissociated when Al reacts to As on the substrate surface so that Al and As may be easily coupled with each other into a compound at relatively low temperature. Through these procedures, the title atomic layer crystal deposition of a compound semiconductor conventionally unrealizable can be made feasible.



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